

# AFCTN Test Report 94-137

## **AFCTB-ID 94-084**



**TMSS Parsing Test** 

MIL-M-9977J, Appendix C, Nonnuclear Munitions Basic Information

**Document Type Definition** 

**MAXIMA Corporation** 

DISA Contract #DCA100-93-D-0065

**Quick Short Test Report** 

23 June 1994



Prepared for Electronic Systems Center Air Force CALS Program Office HQ ESC/AV-2 4027 Colonel Glenn Hwy Suite 300 Dayton OH 45431-1672

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TMSS Parsing Test
MIL-M-9977J, Appendix C,
Nonnuclear Munitions Basic Information
Document Type Definition
For:

MAXIMA Corporation
DISA Contract #DCA100-93-D-0065

**Quick Short Test Report** 

23 June 1994

**Prepared By** 

Air Force CALS Test Bed Wright-Patterson AFB, OH 45433

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## **Air Force CALS Test Bed**

## Notification of Test Results

#### 23 June 1994

This notice documents the results of an Air Force CALS Test Bed (AFCTB) Quick Short Test Report (QSTR) evaluation of data submitted by:

#### **MAXIMA Corporation**

Identified as follows:

Title:

MIL-M-9977J, Appendix C, Nonnuclear Munitions

**Basic Information, DTD Parsing Test** 

Program:

DISA

Program Office:

DISA

Contract No.:

DCA100-93-D-0065

QSTR No.:

**AFCTB-ID 94-084** 

Received on the following media:

3.5" Diskette

The results of the QSTR evaluation are as follows:

MIL-STD-1840A Media Format:

N/A

MIL-D-28000A IGES:

N/A

MIL-M-28001B SGML:

Pass

MIL-R-28002A Raster:

N/A

MIL-D-28003 CGM:

N/A

Formal results with associated disclaimer are documented and available from the AFCTB.

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#### 1. Introduction

#### 1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence The results of informal tests are reported in in them. Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

### 1.2 Purpose

The purpose of this informal test is to analyze Air Force Document Type Definitions (DTDs) for Standard Generalized Markup Language (SGML) syntax, using several commercial and public domain SGML parsers, prior to placing them in the Defense Information Systems Agency (DISA) Asset Source for Software Engineering Technology (ASSET) repository.

#### 2. Test Parameters

Test Plan:

AFCTB 94-084

Date of

Evaluation:

23 June 1994

Evaluator:

George Elwood

Air Force CALS Test Bed DET 2 HQ ESC/AV-2P 4027 Colonel Glenn Hwy

Suite 300

Dayton OH 45431-1672

Data

Originator:

Kay Hill

MAXIMA Corporation 2372 Lakeview Drive Beavercreek OH 45431

(513) 427-5888

Data

Description:

Technical Manual Test

1 DTD

Data

Source System:

Text/SGML

SOFTWARE

Unknown

Evaluation Tools Used:

MIL-M-28001 (SGML)

PC 486/50

Exoterica XGMLNormalizer v1.2e3.2 Exoterica Validator v2.2 ex1 McAfee & McAdam Sema Mark-it v2.3

Public Domain sgmls 1.1

Standards Tested:

MIL-M-28001B

#### **3.** 1840A Analysis

#### 3.1 External Packaging

The 3.5" diskette was hand delivered to the Air Force CALS Test Bed (AFCTB). It was not enclosed in any type of container.

The files received by the AFCTB were not MIL-STD-1840A. The files were not named per the standard conventions, as the stated purpose of the evaluation was the basic data structure.

#### 4. SGML Analysis

The AFCTB has several parsers available for evaluating submitted DTD and text files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. These products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings unless specified in the report.

The goal was to configure the DTD under analysis as it would normally be used. However, for this analysis it was necessary to modify the DTD adding the "DOCTYPE doc [" statement to the start and the companion "]>" to the end of the DTD under evaluation, as stated in the comments of the DTD. If the parser did not support a formal file pointing to the location of the ISO character sets, this was added.

The DTD under evaluation, MIL-M-9977J, Appendix C, Nonnuclear Munitions Basic Information, called a sequence of companion DTDs, each in turn, as illustrated by the diagram below. These DTDs were delivered on the same diskette as the DTD to be evaluated. The DTDs were not changed except to point to the succeeding DTD in the sequence and to insert the location of the ISO character set files in the D784CBO.A3 DTD.

#### MIL-M-9977J Nonnuclear Munitions Basic Information DTD

D977JCO.ORG --> D977JAO.ORG --> D784CBO.A3

The following notes apply to the parsing analysis as indicated in the ensuing paragraphs.

- Note 1. Entity parameters defined more than once is a vaild SGML construct. The duplicate definition errors and/or warnings in this analysis do not indicate any problems.
- Note 2. Some of the parsers report mixed content model warnings.

  The use of such content models is normally unnecessary and therefore not normally recommended. Record boundaries within elements of associated instances may be misinterpreted where a mixed content model exists in the DTD.
- Note 3. The occurrences of warnings "references defined, but not used," appeared because portions of the called DTD, i.e., MIL-M38784C, were not used. They were not used because the entity definitions of the DTD under analysis altered the execution path in the called DTD. The warnings in this analysis do not indicate any problems.

#### 4.1 Exoterica Validator

-->

The DTD file was evaluated using the Exoterica Validator exl parser. The basic DTD was modified by placing the concrete syntax file and "<!DOCTYPE doc [" at the start and the "]>" at the end. No errors were reported by the parser.

The parser reported 31 total warnings of two types. The first type warning was for a parameter entity declared more than once. See Note 1 above.

```
<!-- **Warning** in "c:\ws\977j.dtd" (entity "%mnucbasld"), line 29,
    used in "\xgml\9484.dtd", line 123:
    A parameter entity name has been declared more than once.
    The entity is "%bodyele".
    <!ENTITY % bodyele "(basinfo, bomweapld, practbl)" >
```

5

The second type of warning relates to elements defined but not used in any content model. See Note 3 above.

<!-- \*\*Warning\*\* in "\xgml\9484.dtd", line 288:
An element is not allowed in the document instance because it does not appear in any accessible content model or it is completely excluded.
The element is "ACCPREP".

#### 4.2 Exoterica XGML Normalizer

The DTD file was parsed using the Exoterica XGMLNormalizer parser. The concrete syntax and "<!DOCTYPE doc [" were added to the start and "]>" to the end of the file. No errors or warnings were issued by this utility.

#### 4.3 Public Domain sgmls

The DTD file was evaluated using the Public Domain sgmls v1.1 parser. The file was modified by adding the "<!DOCTYPE doc [" to the start and "]>" to the end of the file as stated in the comments in the DTD. File D784CB0.A3 location was inserted into the DTD. The parser reported 11 total warnings of the same type. This type warning was for duplicate definitions. See Note 1 above.

sgmls: In file included at \ws\9484.dtd, line 51:
 Warning at c:\ws\977j.dtd, line 29 in declaration parameter 4:
 Duplicate specification occurred for "%bodyele"; duplicate ignored

#### 4.4 Sema Mark-it

The DTD file was evaluated using McAfee & McAdam's Sema Mark-it v2.3 parser. The file was modified by adding the concrete syntax and "<!DOCTYPE doc [" to the start and "]>" to the end of the file. No errors or warnings were issued by this utility.

#### 5. Conclusions and Recommendations

The file D977JCO.ORG, MIL-M-9977J, Appendix C, Nonnuclear Munitions Basic Information, conforms to the SGML syntax of ISO Standard 8879, as required by the CALS MIL-M-28001B specification.

The errors, warnings, and comments reported by the parsers used in this evaluation do not indicate invalid SGML syntax. However, the mixed content model flagged by warnings from three of the five parsers, may cause problems in the use of this DTD. See Note 3, Paragraph 4, above.

Recommend the DTD be changed to eliminate the mixed content model. If this is not possible, users should be alerted to the potential problems that may occur in the application of the DTD, and proper guidance should be provided users to avoid the potential problems in the use of this DTD.

#### 6. Appendix A - Detailed SGML Analysis

#### 6.1 Exoterica Validator

```
<!-- **Warning** in "c:\ws\977j.dtd" (entity "%mnucbasld"), line 29,
     used in "\xgml\9484.dtd", line 123:
   A parameter entity name has been declared more than once.
   The entity is "%bodyele".
   <!ENTITY % bodyele "(basinfo, bomweapld, practbl)" >
   The entity is "%shortitleuse".
   The entity is "%shortitle".
   The entity is "%titles".
   The entity is "%sedesc".
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 37,
     used in "c:\ws\977j.dtd" (entity "%mnucbasld"), line 94,
     used in "\xgml\9484.dtd", line 123:
   A parameter entity name has been declared more than once.
   The entity is "%shortitleuse".
   <!ENTITY % shortitleuse "IGNORE" >
   The entity is "%shortitle".
   The entity is "%frnt".
   The entity is "%titles".
   The entity is "%bodyele".
   The entity is "%nparcon".
   The entity is "%sect".
<!-- **Warning** in "\xgml\9484.dtd", line 288:
   An element is not allowed in the document instance because it does not
   appear in any accessible content model or it is completely excluded.
   The element is "ACCPREP".
   The element is "ACFTPREP".
   The element is "ADDRESS".
   The element is "AIRDESC".
   The element is "AIRPREP".
   The element is "AIRPREPLD".
   The element is "BASINFO".
   The element is "BOMBWEAPSECT".
   The element is "BOMWEAPDESC".
   The element is "BOMWEAPLD".
   The element is "CARTINS".
   The element is "CHAPTER".
```

```
The element is "CHGINSSHT".
The element is "CHGLIST".
The element is "CHGREC".
The element is "DDCHAPTER".
The element is "DDDESC".
The element is "DDINDEX".
The element is "DDINTRO".
The element is "DDLIST".
The element is "DDSHEET".
The element is "DEPLOY".
The element is "DLAYFLT".
The element is "DOC".
The element is "DOCNUCBASLD".
The element is "DOCPART".
The element is "EMERGPROC".
The element is "FCTFUNCCHK".
The element is "FERRYPROC".
The element is "GENERAL".
The element is "GENPROC".
The element is "GENSAFREO".
The element is "ILLUSLIST".
The element is "INSERTPG".
The element is "INTRO".
The element is "LOAD".
The element is "LOADPREP".
The element is "NONSTRTOSTR".
The element is "PGNO".
The element is "POSTLDINSP".
The element is "PRACTBL".
The element is "PRACTBLSECT".
The element is "PREFACE".
The element is "PREUNLOAD".
The element is "PRIORLNCH".
The element is "RACKLOAD".
The element is "REMOVEPG".
The element is "SAFING".
The element is "SCOPE".
The element is "SHORTTITLE".
The element is "SPECSAFREO".
The element is "STRAYVOLTCHK".
The element is "STRNONSTR".
The element is "SUPPEQDESC".
The element is "SUPPEQUIPDESC".
The element is "TABLELIST".
The element is "UNLOAD".
The element is "UNLOADPROC".
The element is "VOLUME".
The element is "WARNPAGE".
```

```
<!-- Capacity points/limits:
      TOTALCAP =182649/200000
      ENTCAP =13696/200000
      ENTCHCAP =13313/70000
      ELEMCAP =6656/70000
GRPCAP =38048/70000
      EXGRPCAP =1056/70000
      EXNMCAP =2016/70000
ATTCAP =80320/200000
      ATTCHCAP =1941/70000
      AVGRPCAP =25344/70000
      NOTCAP =96/70000
      NOTCHCAP =163/70000
      IDCAP =0/70000
      IDREFCAP =0/70000
      MAPCAP =0/70000
      LKSETCAP =0/70000
      LKNMCAP =0/70000
<!-- 0 errors and 72 warnings reported. -->
```

#### 6.2 Public Domain sgmls Log

```
sgmls: In file included at \ws\9484.dtd, line 51:
       Warning at c:\ws\977j.dtd, line 29 in declaration parameter 4:
       Duplicate specification occurred for "%bodyele"; duplicate ignored
sgmls: In file included at \ws\9484.dtd, line 51:
       Warning at c:\ws\977j.dtd, line 33 in declaration parameter 4:
       Duplicate specification occurred for "%shortitleuse"; duplicate ignored
sgmls: In file included at \ws\9484.dtd, line 51:
       Warning at c:\ws\977j.dtd, line 41 in declaration parameter 4:
       Duplicate specification occurred for "%shortitle"; duplicate ignored
sgmls: In file included at \ws\9484.dtd, line 51:
       Warning at c:\ws\977j.dtd, line 43 in declaration parameter 4:
       Duplicate specification occurred for "%titles"; duplicate ignored
sgmls: In file included at \ws\9484.dtd, line 51:
       Warning at c:\ws\977j.dtd, line 69 in declaration parameter 4:
       Duplicate specification occurred for "%sedesc"; duplicate ignored
sgmls: In file included at \ws\9484.dtd, line 51:
       In file included at c:\ws\977j.dtd, line 94:
       Warning at i:\dtd\784c.dtd, line 37 in declaration parameter 4:
       Duplicate specification occurred for "%shortitleuse"; duplicate ignored
sgmls: In file included at \ws\9484.dtd, line 51:
       In file included at c:\ws\977j.dtd, line 94:
       Warning at i:\dtd\784c.dtd, line 45 in declaration parameter 4:
       Duplicate specification occurred for "%shortitle"; duplicate ignored
sgmls: In file included at \ws\9484.dtd, line 51:
       In file included at c:\ws\977j.dtd, line 94:
       Warning at i:\dtd\784c.dtd, line 109 in declaration parameter 4:
       Duplicate specification occurred for "%frnt"; duplicate ignored
sgmls: In file included at \ws\9484.dtd, line 51:
       In file included at c:\ws\977j.dtd, line 94:
       Warning at i:\dtd\784c.dtd, line 126 in declaration parameter 4:
       Duplicate specification occurred for "%titles"; duplicate ignored
sgmls: In file included at \ws\9484.dtd, line 51:
       In file included at c:\ws\977j.dtd, line 94:
       Warning at i:\dtd\784c.dtd, line 165 in declaration parameter 4:
       Duplicate specification occurred for "%bodyele"; duplicate ignored
sgmls: In file included at \ws\9484.dtd, line 51:
       In file included at c:\ws\977j.dtd, line 94:
       Warning at i:\dtd\784c.dtd, line 177 in declaration parameter 4:
       Duplicate specification occurred for "%nparcon"; duplicate ignored
sgmls: In file included at \ws\9484.dtd, line 51:
       In file included at c:\ws\977j.dtd, line 94:
       Warning at i:\dtd\784c.dtd, line 206 in declaration parameter 4:
       Duplicate specification occurred for "%sect"; duplicate ignored
```

**TOTALCAP 182276 ENTCAP 13696** ENTCHCAP 12908 ELEMCAP 6656 **GRPCAP 38048** EXGRPCAP 1088 EXNMCAP 2016 **ATTCAP 80320** ATTCHCAP 1941 AVGRPCAP 25344 NOTCAP 96 NOTCHCAP 163 IDCAP 0 IDREFCAP 0 MAPCAP 0 LKSETCAP 0 LKNMCAP 0

## 6.3 Sema Mark-it Parser Log

```
ATTCNT --100-- 48
ATTSPLEN --960-- 0
BSEQLEN --960-- 0
DTAGLEN --16-- 0
DTEMPLEN --16-- 0
ENTLVL --16-- 3
GRPCNT --32-- 22
GRPGTCNT --96-- 27
GRPLVL --16-- 5
LITLEN --3048-- 730
NAMELEN --32-- 14
NORMSEP --2-- 0
PILEN --240-- 0
TAGLEN --960-- 0
TAGLVL --24-- 0
MSDLVL --24-- 2
TOTALCAP --200000-- 191667
ENTCAP --200000-- 16928
ENTCHCAP --70000-- 12990
ELEMCAP --70000-- 6656
GRPCAP --70000-- 44128
EXGRPCAP --70000-- 1088
EXNMCAP --70000-- 2016
ATTCAP --200000-- 80320
ATTCHCAP --70000-- 1941
AVGRPCAP --70000-- 25344
NOTCAP --70000-- 96
NOTCHCAP' -- 70000-- 160
IDCAP --70000-- 0
IDREFCAP --70000-- 0
MAPCAP --70000-- 0
LKSETCAP --70000-- 0
LKNMCAP --70000-- 0
```

#### 6.4 **D977JC0.ORG**

```
<!-- SUPPLEMENT NOTICE: This file is made available to provide the user with
a digital representation of the DTD found in Appendix D of MIL-M-5096E.
This file is incomplete without MIL-M-5096E. -->
<!-- NOTE: The start and end of this file are marked with a row of asterisks.
If these rows are not present the file may not be complete! -->
<!-- MIL-M-9977J Nonnuclear Munitions Basic Information DTD -->
<!-- The following set of declarations may be referred to by
using a public entity as follows:
<!ENTITY % mnnmunbas PUBLIC "-//USA-DOD//DTD MIL-M-9977J
NMB//EN">
%mnnmunbas; -->
<!-- NOTE: In order to parse the following DTD subset alone,
append the following statement to the beginning of the file:
    <!DOCTYPE docnnmunbas [
and the associated "]>" to the end of the file. -->
<!-- ENTITY DECLARATIONS -->
<!ENTITY % mnucbasld PUBLIC "-//USA-DOD//DTD MIL-M-9977J
NBL//EN">
<!ENTITY % bodyele "(munitdesc, suspequipdesc, gunpodsdesc,
sedesc, suppinfo)" >
<!ENTITY % shortitleuse "IGNORE" >
<![ %shortitleuse; [
<!ENTITY % shortitle ", shorttitle?" >
]]>
<!ENTITY % shortitle " " >
```

```
<!ENTITY % titles "title %shortitle;" >
<!ENTITY % sedesc "%titles;, bombliftruck, munadapters,
munitrailers, ammoloadsys, testequip, testadapters " >
%mnucbasld;
<!-- ELEMENT and ATTRIBUTE LIST DECLARATIONS -->
<!ELEMENT ammoloadsys
                          - o (%sect;) >
<!ATTLIST ammoloadsys
                          tocentry %yesorno; "1"
                          shortentry %yesorno; "0"
                          %bodyatt;
                          %secur; >
<!ELEMENT bombliftruck
                           - o (%sect;) >
<!ATTLIST bombliftruck
                          tocentry %yesorno; "1"
                           shortentry %yesorno; "0"
                           %bodyatt;
                           %secur; >
<!ELEMENT bombtypemun
                          - o (%sect;) >
<!ATTLIST bombtypemun
                          tocentry %yesorno; "1"
                          shortentry %yesorno; "0"
                          %bodyatt;
                          %secur; >
<!ELEMENT cartchafflar
                           - o (%sect;) >
<!ATTLIST cartchafflar
                           tocentry %yesorno; "1"
                           shortentry %yesorno; "0"
                           %bodyatt;
                           %secur; >
<!ELEMENT docnnmunbas - - (front, body, rear?) +(pgbrk | brk)>
<!ATTLIST docnnmunbas service %service; 'AF'
                       %secur;
                       %docatt; >
<!ELEMENT fuzes
                    - o (%sect;) >
<!ATTLIST fuzes
                    tocentry %yesorno; "1"
                    shortentry %yesorno; "0"
                    %bodyatt;
                    %secur; >
```

```
<!ELEMENT gunpods
                      - o (%sect;) >
<!ATTLIST gunpods
                      tocentry %yesorno; "1"
                      shortentry %yesorno; "0"
                      %bodyatt;
                      %secur; >
<!ELEMENT gunpodsdesc
                          -- (%titles;, guns, gunpods)
                              +(figure | table) >
<!ATTLIST gunpodsdesc
                          tocentry %yesorno; "1"
                          shortentry %yesorno; "0"
                          %bodyatt;
                          %secur; >
<!ELEMENT guns
                   - o (%sect;) >
<!ATTLIST guns
                   tocentry %yesorno; "1"
                   shortentry %yesorno; "0"
                   %bodyatt;
                   %secur; >
<!ELEMENT lnchdispensers
                             - o (%sect;) >
<!ATTLIST lnchdispensers
                             tocentry %yesorno; "1"
                             shortentry %yesorno; "0"
                             %secur;
                             %bodyatt; >
<!ELEMENT missrockammo
                           - o (%sect;) >
<!ATTLIST missrockammo
                           tocentry %yesorno; "1"
                           shortentry %yesorno; "0"
                           %bodyatt;
                           %secur; >
<!ELEMENT munadapters
                          - o (%sect;) >
<!ATTLIST munadapters
                          tocentry %yesorno; "1"
                          shortentry %yesorno; "0"
                          %bodyatt;
                          %secur; >
<!ELEMENT munitacc
                       - o (%sect;) >
<!ATTLIST munitacc
                       tocentry %yesorno; "1"
                       shortentry %yesorno; "0"
                       verified %yesorno; "0"
                       %bodyatt;
                       %secur; >
```

```
<!ELEMENT munitdesc -- (%titles;, missrockammo, bombtypemun,
                             fuzes, cartchafflar, munitacc)
                             +(figure | table) >
<!ATTLIST munitdesc
                       tocentry %yesorno; "1"
                        shortentry %yesorno; "0"
                       %bodyatt;
                       %secur; >
<!ELEMENT munitrailers
                          - o (%sect;) >
<!ATTLIST munitrailers
                          tocentry %yesorno; "1"
                          shortentry %yesorno; "0"
                          %bodyatt;
                          %secur; >
<!ELEMENT racks
                   - o (%sect;) >
<!ATTLIST racks
                   tocentry %yesorno; "1"
                   shortentry %yesorno; "0"
                   %secur;
                   %bodyatt; >
<!ELEMENT sedesc
                    -- (%sedesc;) +(figure | table) >
<!ATTLIST sedesc
                    tocentry %yesorno; "1"
                    shortentry %yesorno; "0"
                    %secur;
                    %bodyatt; >
<!ELEMENT spectools
                       - o (%sect;) >
<!ATTLIST spectools
                       tocentry %yesorno; "1"
                       shortentry %yesorno; "0"
                       %bodyatt;
                       %secur; >
<!ELEMENT suppinfo
                      -- (%titles;, (para0+ (spectools,
                             section+))) +(figure | table) >
                      tocentry %yesorno; "1"
<!ATTLIST suppinfo
                      shortentry %yesorno; "0"
                      %bodyatt;
                      %secur; >
<!ELEMENT suspequipdesc - o (%titles;, racks, lnchdispensers)
                                +(figure | table) >
<!ATTLIST suspequipdesc
                           tocentry %yesorno; "1"
                           shortentry %yesorno; "0"
                           %secur;
                           %bodyatt; >
```